

Daland (J.) & Robinson (W.D.)

al

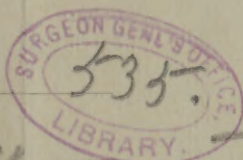
A CLINICAL STUDY OF THREE CASES OF  
SPONTANEOUS HÆMOPHILIA  
IN BROTHERS.

BY

JUDSON DALAND, M.D. (UNIV. OF PA.),  
LECTURER ON PHYSICAL DIAGNOSIS AND INSTRUCTOR IN CLINICAL MEDICINE IN THE  
UNIVERSITY OF PENNSYLVANIA; ASSISTANT PHYSICIAN TO THE  
UNIVERSITY HOSPITAL; FELLOW OF THE COLLEGE  
OF PHYSICIANS, PHILADELPHIA.

AND

W. DUFFIELD ROBINSON, M.D.

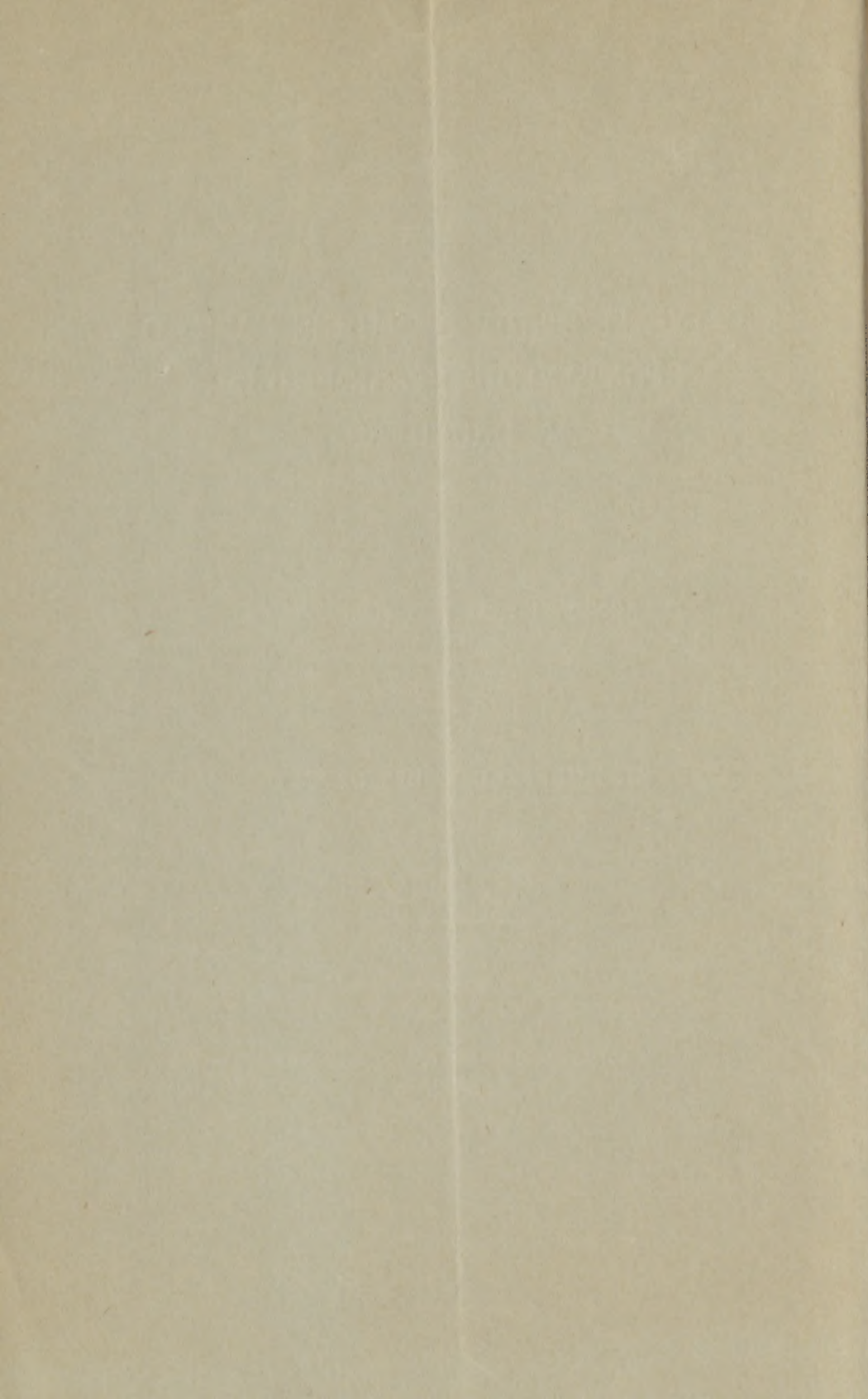


*presented by the author.*

*Read before the Philadelphia County Medical Society,*

*January 9, 1895.*







# A CLINICAL STUDY OF THREE CASES OF SPONTANEOUS HÆMOPHILIA IN BROTHERS.

BY JUDSON DALAND, M.D.,

LECTURER ON PHYSICAL DIAGNOSIS AND INSTRUCTOR IN CLINICAL MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA; ASSISTANT PHYSICIAN TO THE UNIVERSITY HOSPITAL; FELLOW OF THE COLLEGE OF PHYSICIANS, PHILADELPHIA,

AND

BY W. DUFFIELD ROBINSON, M.D.

[Read January 9, 1895.]

THE occurrence of three cases of hæmophilia in one generation, with the tendency so marked that in two of the brothers there was a fatal termination, justifies the addition of this report to the literature on the subject.

CASE I.—Boy, aged thirteen years, living in Pennsylvania, at an elevation of 1800 feet. He was born at full term, and there was nothing unusual or remarkable during pregnancy or delivery, nor was there unusual bleeding. For eight months he was healthy and vigorous, and the skin was exceedingly clear, transparent, and pale. At that time he was taken with cholera infantum, and was ill three months. His recovery was coincident with the first frost that occurred that year, to which climatic condition his physician ascribed his recovery.

As his mother was unable to supply nourishment he was fed by the bottle. During the last two weeks of his illness there was noticed a profuse petechial eruption over the abdomen, the back, and the legs, and, to a less extent, over the arms. The eruption was described as rounded, non-elevated spots of the size of a pin-head, black in color, uninfluenced by pressure, evidently purpuric in character. There was no hemorrhage from any of the mucous membranes.

After this illness he remained well until about the age of five years, when he suffered from an attack of arthritis, affecting especially the elbows, knees, and wrists, and this was accompanied by fever and acid sweats. The joints were swollen, red, and painful. Relief was apparently obtained by the use of moist applications and the internal administration of salicylic acid and salicylate of sodium. From the fifth year up to the present, the thirteenth





year, he has averaged one attack of arthritis every two months, and the peculiarity of these attacks, which usually followed exposure to cold or wet, was that the symptoms appeared forty-eight hours after the exposure. Recently the attacks have been less frequent and less severe. Soon after the fifth year the arthritis was so severe that considerable ankylosis ensued, necessitating the use of crutches until the ninth year, when relief was obtained from Swedish movements and massage. At the age of eight he had an attack of measles; later whooping-cough and scarlatina, from which he recovered without any complications or sequelæ. Since the age of five he had, approximately, *fifty* attacks of hemorrhages from various mucous membranes, but there was no recurrence of purpura. His father has observed that prior to the hemorrhages there would be grinding of the teeth or the face would become flushed, and in consequence he was frequently able to foretell an attack. Most of the hemorrhages were nasal, but on two occasions hæmaturia followed trauma of the renal region, and on one occasion hæmatemesis, from the same cause applied to the abdomen. Later he accidentally bit his tongue, which was followed by oozing, and then free hemorrhage, which continued for seven days. To control the nasal hemorrhage many remedies were employed, but relief was only obtained when ice was applied to the nape of the neck and to the bridge of the nose, *after* large quantities of blood had been lost, and when the physician in attendance thought death was imminent. For the injury to the tongue Monsel's solution was first used, which caused a cessation of the bleeding for a short time; but soon the coagulum was loosened by the oozing of blood and saliva, so that the hemorrhage was more violent than at the first, owing to the destruction of the tissue produced by the remedy.

Effort to check the hemorrhage from the use of intense cold produced by an ether spray proved valueless, as the spray could not be continued for a sufficient length of time, owing to the danger of ether narcosis and the repeated attacks of vomiting excited by the anæsthetic.

Compression by means of forceps was attempted, but owing to the site of the injury, which was on the side of the tongue, about two inches from the tip, it was extremely difficult to apply the forceps properly for any length of time without exciting gagging and vomiting.

Ice was applied for five minutes, until the wound was partially frozen; then it was removed for a similar time, and subsequently reapplied. This was continued for twelve hours, after which the hemorrhage ceased. At that time he showed all the evidence of extreme anæmia and caused his physician to think that death was imminent. Fluid extract of ergot was given in thirty drop doses every three hours.

After each of the hemorrhagic attacks there were nausea and vomiting. When the finger was cut it bled continuously for hours, and was only relieved when Monsel's powder was applied. His father distinctly recalls a number of occasions when this boy received a slight blow on some part of the body, so slight as not to produce even a bruise in a normal individual, which was followed by great pain, swelling, fever, and discoloration of the skin, showing that a considerable extravasation of blood had occurred. The greatest swelling was observed forty-eight hours after the reception of an



injury, at which time the pain disappeared. The slow development of this swelling and discoloration of the skin would seem to prove that the more deeply seated bloodvessels were ruptured, from which oozing took place. The slight traumatism was able to produce this result owing to the extreme vulnerability of the walls of the bloodvessels.

The patient has been always intensely nervous and sensitive, and frequently, after suffering from an attack of so-called articular rheumatism, he complained bitterly of pain in the joints from the vibration produced by any one walking about the room, even though his parents were unable to detect any movement of the bed which he occupied.

A week ago, while visiting Philadelphia to receive massage for partially ankylosed joints, he was observed to be extremely nervous, with choreiform twitching of the muscles of the face. That night there was grinding of the teeth, and the left edge of the tongue was bitten about half an inch from the tip, produced during sleep by the grinding of the teeth or from a slight convulsion. The following day there was a slight oozing, which continued for seventy-two hours, and increased until he lost about one ounce of blood per hour.

Many local remedies were tried, among which may be mentioned the use of powdered alum, antipyrine, Monsel's solution, and ice; but all proved valueless. Large doses of the compound syrup of the iodobromate of calcium were administered, and also ergot, oil of erigeron, and gallic acid; but these remedies were inefficient. On the sixth day of the hemorrhage I was given an opportunity of studying the case with his attending physician, Dr. W. Duffield Robinson. I found the patient to be well developed; his skin and mucous membranes were pale; the pulse frequent, feeble, and regular. The heart was slightly dislocated toward the right, the apex-beat could be felt in the sixth interspace, but occupied a somewhat larger area than normal; the first sound was weak and the second sound sharp and accentuated. No murmur at the apex was audible, although a systolic murmur had been detected by Dr. Robinson at a previous examination. Over the aortic cartilage a sharp second sound was heard, and the pulmonic second was also sharp. Despite the high grade of anemia present no hæmic or other murmur was audible. The examination of the lungs and abdominal viscera was negative. The skin was carefully examined, but only one purpuric spot was detected, on the inner surface of the left knee-joint, occupying an area having a diameter of three-fourths of an inch. It was supposed that this was due to a slight injury, as no other subcutaneous effusion of blood occurred. The right leg was slightly shorter than the other, and the left knee-joint was considerably enlarged. The muscles of the legs were moderately atrophied. The physiognomy showed that the patient was intellectual, bright, precocious, and the skull was capacious.

As several acts of vomiting had occurred, and nausea and intense thirst were complained of, the administration of food and remedies by the mouth was suspended, and a nutritive enema given, to which fluid extract of ergot was added. To secure relief from nervous and muscular excitement, and to insure quiet, large doses of paregoric were given per rectum, with 15 grains of trional to secure sleep. On the seventh day, from 6 A.M. till noon,



the father, who had observed him continuously, reported that the amount of blood lost was trifling and that very little had been swallowed. During this time ice had been applied every alternate five minutes. His condition showed that a considerable quantity of blood had been lost during the previous twenty-four hours. It was observed that the pulse at the wrist numbered 70, while the heart-beats were 130 per minute.

Physical examination showed that the arterial system was partially empty and the veins collapsed. It was evident that the peripheral circulation was imperfect, as not more than half of the systoles of the heart were able to produce a pulse at the wrist. This condition of the peripheral circulation, the increase in the amount of fibrin that occurs after large hemorrhage, together with the muscular and mental quiet produced by opium, were counted upon to favor the formation of a coagulum, thus checking the hemorrhage. A minimum quantity of water was allowed, despite severe thirst, so as to prevent refilling of the almost emptied vessels with the concurrent increase of blood-pressure and danger of expelling a slow-forming clot. An examination of the blood showed that it was rather lighter in color than normal, liquid, and, notwithstanding the large quantities lost, there was but little tendency to the formation of clots. This want of coagulability was and always has been a marked characteristic of each of these hemorrhages.

Microscopic examination of the blood showed an enormous number of very small microcytes, many of which were mere points. There were a few macrocytes and a moderate increase in the number of leucocytes. There were no parasites nor distorted red blood-cells, and crenation and rouleaux-ing were normal. The blood for this examination, which was obtained at the end of a protracted bleeding spell extending over a week, showed a decidedly greater tendency to clot than on any former occasion.

The Thoma-Zeiss hæmocytometer showed 3,775,000 or 75.5 per cent., and Fleischl's hæmometer showed 62 per cent. of hæmoglobin.

The next day an examination showed well-marked evidence of quantitative and qualitative anæmia, no hæmic murmurs audible, although especially searched for; the blood from the prick of the finger showed a normal tendency to clot, and the hemorrhage, which had recurred, instantly ceased when Dr. Robinson made a local application of a 4 per cent. solution of cocaine. The stomach was more retentive, and there were evidences of beginning convalescence.

The condition of the blood gradually improved, and an examination made two weeks later gave the following results: The blood emerged from the puncture freely, much more so than from a healthy individual. It was of a good color and coagulated slowly. Microscopically the blood presented a normal appearance, with the exception that there were rather more large red corpuscles than are ordinarily seen. The microcytes had entirely disappeared. The color of the red cells was somewhat paler than normal. The Fleischl hæmometer showed 70 per cent. of hæmoglobin and the hæmatokrit showed 84 per cent. of red cells. There was no leucocytosis.

At this time the finger was accidentally cut, and hemorrhage continued for thirty minutes despite the application of ice. When a 4 per cent. solu-



tion of cocaine was employed the bleeding was checked immediately, and did not recur.

*Family history.* The first child was born prematurely and died shortly after birth. The second child was a boy, who was perfectly well up to sixteen months old, at which time he began to bleed from the nose, and developed hydrocephalus at the age of three and a half years. The attacks of epistaxis from which he suffered were frequent, severe, and uncontrollable. He would almost bleed to death, and then gradually recover. There were no other mucous membrane hemorrhages, and at no time was there purpura. This child finally died of hemorrhage from the nose. The third child was a boy, who was perfectly healthy until the age of two years, when he died within forty-eight hours from malignant scarlet fever. At no time was there any tendency to hemorrhages nor evidence of hæmophilia. The fourth child was a boy, who died of hemorrhage from the mouth at the age of eighteen months. He was anæmic, poorly developed, and an eruption was observed upon the skin. The first hemorrhage occurred when he began cutting teeth, and the quantity of blood lost was considerable. Later, when the molars were erupted, a fatal hemorrhage occurred, despite the use of every known means for its relief. The fifth child was a girl, who died at the age of three months without showing evidence of hæmophilia.

The mother of these children is one of a family of ten, all of whom were healthy. She has never shown any tendency to hemorrhages, with the exception that after the extraction of a tooth she observed that the amount of hemorrhage was greater than normal. This fact was well recognized by the dentist, who would extract one tooth, but declined to remove a number at one time. The father has never shown any hæmophilic tendency, denies syphilis, and has always enjoyed good health. The maternal grandfather is said to have been "scrofulous," and had enlarged cervical glands, which might have been tubercular or syphilitic. With this exception the other members of this family, which are numerous, and may be traced to the third and fourth generations, have never known of a single case of the bleeders' disease. The father's family was also traced to the fourth generation, and the members of it were intelligent, healthy, and vigorous, not a single case of hæmophilia having occurred.

REMARKS.—These cases are particularly interesting for the following reasons:

1. That each of these cases occurred in brothers.
2. That they all showed the first tendency to hæmophilia at an early age, particularly while teething. The oldest patient's trouble began with epistaxis, following an attack of cholera infantum, which may have been a gastro-intestinal purpura. The first case is also interesting from its association with arthritis, from the statement that frequently the hemorrhage would occur in forty-eight hours after an exposure which would excite a coincident attack of arthritis and fever.



3. The fact that slight trauma would produce extensive hemorrhage, proving that the bloodvessel walls were remarkably fragile.

4. The extraordinary diminution of the coagulability of the blood.

5. The valuelessness of all the ordinary local remedies and agents for the relief of hemorrhage from the wound of the tongue, with the exception of the local influence of cocaine and ice and the internal administration of the fluid extract of ergot. We are disposed to attribute the greatest influence to the enormous loss of blood, by which not only was the fibrin increased, but also the peripheral circulation was slowed, so as to allow of the gradual formation of a thrombus. The use of cocaine as a local hæmostatic was suggested by Dr. W. Duffield Robinson. The remarkably brilliant results obtained in the first case lead us to hope that similar good may be obtained in other cases.

6. The occurrence of marked flushing of the face as a precursor of an attack of hemorrhage.

7. The opinion of the father that the intense nervous excitement produced by these violent pains in these attacks of arthritis may be an exciting cause of epistaxis.

8. The greater frequency and violence of these hemorrhages since removal from an altitude of 1800 feet to that of 2200 feet, and the consequent deduction that hæmophilics should be removed to the sea-level.

9. The occurrence of repeated attacks of acute arthritis with intense pain, redness, and great swelling in association with fever and sweating, which are so frequently observed in hæmophilics, and the fact that they were erroneously diagnosed as attacks of rheumatism. The want of coagulability of the blood at the time of these acute outbreaks, their occurrence forty-eight hours after exposure to cold or damp, the frequent coincident occurrence of hemorrhage, and the absence of endocarditis, are all points in favor of the supposition that these were *not* attacks of rheumatic arthritis, but were hæmophilic in origin, perhaps due to the effusion of blood into the joints.

10. The second case is interesting from its association with hydrocephalus and the occurrence of death from epistaxis.

11. The third case illustrates the importance of teething in producing the first manifestations of hæmophilia, and shows how readily death may occur from this cause.



